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ABSTRACT

The first step in aggregating qualitative data is to establish parameters for cross site analysis. Establishing parameters should include: (1) building a conceptual framework, (2) defining units of analysis, (3) developing core questions, and (4) establishing guidelines for handling unique features in each site. Two basic approaches to analyzing qualitative data are examined: the structured and the intuitive approach. Structured analysis uses content analysis, coding frameworks, and statistical analysis to analyze data. Intuitive analysis uses progressive focusing, emerging issues, auditing, and data exclusion to analyze data. It would be very difficult to aggregate data across multiple sites using solely an intuitive approach, yet the structured approach is too restrictive for most studies. The ideal is to merge the flexibility of intuitive analysis with the systematic nature of structured analysis. Features encompassed in the integration of intuitive and structured qualitative analysis are presented. (PN)

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Aggregating Qualitative Data for Cross-Site Analysis

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AGGREGATING QUALITATIVE
DATA FOR CROSS-SITE ANALYSIS

There are two main canons for research and evaluation studies--validity and reliability. High quality research should be both an accurate representation of reality and capable of being replicated by others. Many authors have concluded that validity is a major strength of qualitative studies. (Crain, 1977; Erickson, 1977; Reichardt and Cook, 1979; LeCompte and Goetz 1982). Validity is considered the strong suit of qualitative studies for four reasons. First, the researcher is on site for extended periods which provides opportunities to refine constructs to match reality. Second, the researcher uses personal interviews which allows questions to be phrased to precisely match each respondent's reality. Third, the researcher uses direct observation of actual settings which reflect the reality of life more fully than any contrived setting or instrument could. Fourth, qualitative studies incorporate a process of iterative refinement that exposes all phases of the research to continual questioning and reevaluation (LeCompte & Goetz 1982)

Reliability, on the other hand, is often criticized as the major weakness of qualitative studies. Reliability requires that a researcher using the same methods can obtain the same results as those of a prior study. Reliability is considered the weak suit of qualitative studies for three reasons. First, because qualitative studies occur in natural settings, no standardized controls or manipulations of phenomena are used. Second, the qualitative process is personalistic; no qualitative researcher works just like another. Third, qualitative methods of data collection and analysis lack the standardized conventions of quantitative instruments and statistical analysis.

Parameters for Cross Site Analysis

The first step in aggregating qualitative data is to establish parameters for cross site analysis. Establishing parameters should include: (1) building a conceptual framework, (2) defining units of analysis, (3) developing core questions, and (4) establishing guidelines for handling unique features in each site.

Conceptual Frameworks. The most critical element of effective qualitative research is the conceptual framework. In traditional research, a conceptual framework is conceived at the beginning of the study to guide all subsequent activities. In qualitative research, the conceptual framework usually continues to change and be refined throughout the study. Conceiving a conceptual framework is an iterative process between intellect and action. The qualitative researcher begins with a set of conceptual hunches. These hunches are refined once the researcher is on site and has opportunities to begin adjusting initial impressions with reality. A sample conceptual framework from a recent synthesis of case studies of vocational education R&D projects (Hull, Adams & Bragg, 1981) is illustrated in Figure 1.

Unit of Analysis. Unit of analysis is a flexible dimension of qualitative research. In traditional research, unit of analysis typically is defined in terms of individual respondents. In qualitative research, the unit analysis could be almost any activity, process, feature, or dimension. McClintock et al. (1979) discuss the case cluster technique which involves three features: (1) defining units of analysis, (2) stratefied sampling of data sources, and (3) coding data by the defined units of analysis.

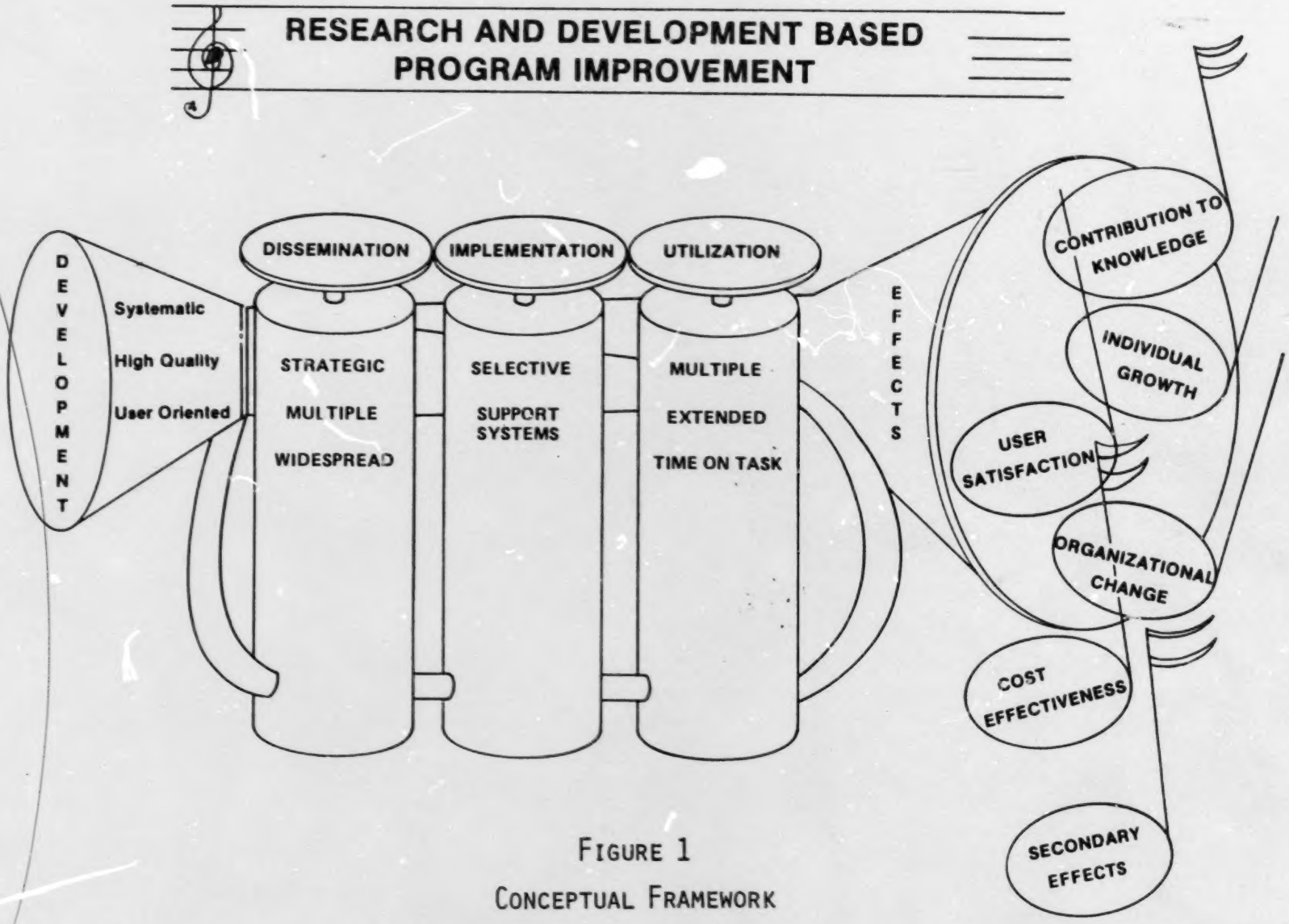

FIGURE 1

CONCEPTUAL FRAMEWORK

McClintock provided three examples of the case cluster method:

- o using decisions as the unit of analysis to test the generalizability of decision-making theories
- o using tasks as unit of analysis to test the level of uncertainty in completing tasks
- o using planning events as the unit of analysis to test different approaches to planning.

These three examples illustrate a range of definitions for unit of analysis. In observing vocational education programs and interviewing those involved, many different units of analysis could be defined. for example:

- o analyzing interview statements from vocational educators to determine the number of references to technology
- o observing vocational education classes to determine the number of minutes spent on basic skills
- o reviewing vocational education class lesson plans to determine the amount of activities on employability skills.

Core Questions. Core questions are those which typically will be answered through each individual interviewed, site observed, or document reviewed. The core questions form the heart of the study. A qualitative researcher typically starts with a tentative set of core questions then lets the final set emerge through a trial and error process once on site. Core questions provide the framework for making cross-site comparisons. Figure 2 shows an example of core questions for R&D impact which emerged from a synthesis of case studies of vocational education R&D projects (Hull, Adams, & Bragg, 1982).

1. Systematically Conducted. What process was followed in conducting the R&D?

2. High Quality. What is the quality of the R&D product?

3. User Oriented. How was the R&D oriented to users?

4. Strategic Dissemination. What strategies were used to disseminate the R&D?

5. Multiple Communication Channels. What channels for communicating information about the R&D were used?

6. Widespread Dissemination. How widely was the R&D product disseminated?

7. Selective Implementation. How were the R&D and site mutually adapted during implementation?

8. Support Systems. What personal, information, and physical resources were available to support implementation? (e.g., dollars, training, administrative endorsement)

9. Multiple Patterns of Use. How was the R&D product used?

10. Time on Task. What time has been committed to using the R&D?

11. Integrated Use. How was the R&D integrated into ongoing programs and practices?

12. User Satisfaction. How would you describe your overall reaction to the R&D? What did you like best? What did you like least?

13. Individual Growth. How has participating in this R&D affected you personally?

14. Organizational Change. How has participation in the R&D affected your program?

15. Societal Effects. How would you summarize the most important contributions of this R&D to vocational education?

FIGURE 2

CORE QUESTIONS FOR ANALYZING
R&D IMPACT

Unique Features. In addition to the core features, there typically will be unique features present in the sites and individuals studied. Unique features are one of the most challenging issues for a researcher to handle in cross site analysis. There is frequently a fine line between features that could be considered core and those which are actually unique.

Intuitive Analysis of Qualitative Data

There are two basic approaches to analyzing qualitative data: (1) structured and (2) intuitive. Structured analysis uses content analysis, coding frameworks, and statistical analysis to analyze data. Intuitive analysis uses progressive focusing, emerging issues, auditing, and data exclusion to analyze data. Let's examine some key features of each analysis approach.

Intuitive analysis begins on site and is foremost in the researcher's mind from the first interview onward. The following are some guidelines for implementing an intuitive approach to analyzing qualitative data (Adams, 1982).

1. Use a team of senior evaluators. If qualitative data is to be analyzed intuitively, using a team approach is recommended. A team of three facilitates stimulating discussion and balanced participation without requiring a lot of time

   In a qualitative approach, the evaluator becomes the instrument. Human instruments have the advantage of tremendous flexibility that allows data to be collected through different senses simultaneously. Information can be processed and categorized quickly so that subsequent probes reflect previous responses. However, human instruments often carry preconceived ideas that influence the way information is received and categorized. This problem is minimized by using a team approach. Team members provide a valuable reliability check. By watching each other's perceptions for bias, a team helps avoid premature closure on half-formed issues and wrong interpretations.

2. Focus the evaluation around critical issues which emerge on site. During each day on site, potentially meaningful issues begin to emerge. Watch for these and make marginal notes about them. At the end of each day of interviews and observation, meet with the other members of the team for an "issue analysis seminar." The primary purpose of these seminars is to look for important issues. Team members individually review their notes to fill in gaps and pick out major issues. They are encouraged to argue, rearrange, and reject issues based on their individual experiences and perceptions.

3. Test preliminary findings. Issue analysis seminars provide an excellent means of testing preliminary findings and an awareness of subtle biases within the evaluation team. Preliminary findings should be tested to bring out contradictory findings, missing facts, and difficult situations that need to be verified during the next day on site. Discussions of preliminary findings should result in a set of probing questions, a "fact sheet" of

vital pieces of information, and action steps to work around difficult situations.

4. Begin analysis on site. Daily issue-analysis seminars add focus to the next day's work. At first, issues will be repeated and rearranged, but at some point they will form major topics. This allows the team to begin to organize notes around these issues so that a major portion of the analysis occurs on site.

   An issue-oriented outline helps focus the evaluation. It minimizes the problem of rambling reports with unclear findings by forcing the evaluators to organize their thoughts around the major findings. The report outline should be prepared on site during the last issue-analysis seminar. The report can be structured to present the top 5 to 10 issues in order of significance with verbal equivalents of .001 to .05 confidence levels. Issues that are less significant, impressions, unique site features, and secondary effects - can then be presented as a group.

5. Give an oral debriefing to key respondents at the end of the visit. An issue-oriented report outline provides an excellent vehicle for sharing preliminary findings with key respondents while you are on site. A debriefing allows evaluators to test the validity of the findings. It is also a good means for checking the feasibility and usefulness of recommendations so these can be tempered in the written report.

Structured Analysis of Qualitative Data

Structured analysis involves developing a set of categories for analyzing qualitative data. Content analysis, "a research technique for the objective, systematic, and quantitative description of the content of communication" (Krippendorf, 1980), is a frequently used approach for structured analysis of qualitative data. Content analysis involves five steps: (1) determining categories for analyzing the content, (2) developing a sampling plan, (3) developing coding instructions, (4) coding the data by established categories, and (5) interpreting results of the content analysis. Using content analysis, interview transcripts could be broken down into small units of content, coded into a set of categories, and then analyzed.

Guba and Lincoln (1981) assign the following four characteristics to content analysis:

1. A rule-guided process. Rules must be derived, procedures delineated, and criteria defined in order for a subsequent analyst to arrive at the same inferences from the content.
2. A systematic process. Canons of logic must be used to follow the rules when classifying content.
3. It aims for generality. The results from this approach should further the development of insights into the content.
4. It deals in manifest content. Some freedom is allowed in interpreting inferences from the categories once they have been coded.

Merging Intuitive And Structured Analysis Of Qualitative Data

It would be very difficult to aggregate data across multiple sites using solely an intuitive approach. Yet the structured approach is too restrictive for most studies. The ideal is to merge the flexibility of intuitive analysis with the systematic nature of structured analysis.

Integration of intuitive and structured qualitative analysis would encompass the following features (Yin, 1982).

1. Conduct pilot studies in several sites using intuitive analysis to allow a reality based set of substantive issues for guiding the study to emerge.

2. Develop field procedures that facilitate the cumulation of evidence around specific issues rather than around specific respondents or documents.

3. Maintain comparable procedures across sites even though the specific activities, respondents, and available documents may vary.

4. Create a design that facilitates cross-site synthesis rather than just an array of individual case studies.

5. Use a framework that continues to allow for serendipitous and ideosyncratic discoveries at each site.

6. Maintain a chain of evidence from the initial conceptual framework to the final inferences from the data which explicitly documents each analytic step. This chain of evidence should provide an audit trail that others could review to determine how findings and conclusions were derived from the data.

7. Allow the researcher to follow hunches, search deeply for clues, and test and retest preliminary findings.

8. Encourage the researcher to tap the insights of and verify findings with others through an interactive process.

9. Maintain a balance between cognitive structuring and reality testing. Don't finalize conceptual frameworks and substantive issues until they have been fully tested in real situations. Don't allow individual site differences to preclude against cognitive synthesis.

10. Maintain a balance between structural and intuitive procedures. Allow both left and right brain functions to guide each phase of the study.

Summary

Cross site analysis of qualitative data produces a different kind of finding - insights into complex situations. As we continue to strengthen the methodology for conducting qualitative studies, their immense value to vocational education will be realized. There is something special and fragile about the types of insights reflections, and hunches that emerge from qualitative studies. We need to build analysis procedures that help these impressions emerge and take shape rather than beating them back into oblivion. If rigor can be welded into the intuitive analysis process, I think we will have a keen-edged feather for probing ever-deepening issues in future vocational education research and evaluation studies.

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